REMARKS

Claims 12, 15-19, 22-26 and 29-30 are pending. Claims 12, 19 and 26 were amended to clarify the scope of the recited range of ratios. No new matter was added. Ratios that are greater than or equal to 2 are clearly disclosed in at least Table 2 on page 7 of the present specification.

Request for Interview Prior to Formal Action on Amendment

Applicants request an interview prior to formal action on this response. An " Applicant Initiated Interview Request Form" accompanies this response. Please contact Applicants' undersigned representative to schedule the interview.

Rejection under 35 U.S.C. § 102(b)

Claims 12, 15-19, 22-26, 29 and 30 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,938,567 (Chartier et al.) in view of U.S. Patent No. 6,491,215 (Irwin, Jr. et al.), hereafter, "Irwin."

Applicants respectfully traverse the rejection for at least the reasons set forth below.

1. Chartier vs. the present invention

Chartier discloses "an electro-optical panel and, more especially, an intersection point transistor structure made with thin films, wherein there is provided a doubling of the line and column electrodes (LG, CL) by doubling elements ($1g_1$, Col. 1, Col. 2), as well as a light barrier (EC) shielding a transistor." (Abstract.) "These advantages are redundancy in lines and columns which are doubled to avoid breaks, double insulation at the intersection of the lines and columns with a silicon pad, if necessary, as a reinforcement." (Column 2, lines 29-32) (Emphasis added.) Chartier does not disclose, teach or suggest the use of multi-layered wires to reduce the resistance in a wire structure, nor does Chartier disclose, teach or suggest a larger b/a ratio to reduce the resistance of the overall wire.

Unlike the object of providing redundancy, an object of the present invention is to provide "a wire structure and a manufacturing method thereof, by using an at least two-layered wire structure to reduce the resistance of the wire." (page 2, lines 19-21 of the present specification) (Emphasis added.) Table 2 on page 7 of the present specification shows the

relationship between a ratio of the length of the branch line 202 to the width of the fillister 206 and an overall resistance. Furthermore, it is indicated that "in the double-layered, tooth-like wire structure of the present invention, when the proportion of the branch line 202 parallel to the main line 200 increases, i.e. the ratio b/a increases, the resistance of the overall wire decreases." (page 7, lines 8-10 of the present specification) (Emphasis added.)

In Chartier, each of transistors is disposed on a corresponding gate line (see, for example, Figs. 2, 6 and 12), which squeezes the space for a corresponding line electrode portion lg1. As a result, the length of the corresponding line electrode portion lg1 is limited while the distance between two immediately adjacent line electrode portions is relatively large. In other words, the b/a ratio of the wire structure in Chartier is relatively small, and is significantly below 2.

Unlike Chartier, each of transistors 402 (see, for example, Fig. 9) of the present invention is disposed near an intersection of a corresponding gate line and a corresponding data line, and not disposed on the gate line or data line. As a result, greater b/a ratio values, ranging from 2 to 9, can be obtained in the gate line and data line in the present invention, as compared to Chartier. Chartier therefore does not provide the advantages of the present invention.

The b/a ratio refers to the length of a branch line (b) divided by the width of a fillister (a). See page 6, line 20 of the present specification. The b/a ratio is completely different than the formula for calculating resistance of a material, described on page 6, lines 6-10 of the present specification.

2. Irwin

The Examiner concedes that Chartier lacks a disclosure of the specified ratio, and relies upon column 27, lines 1-7 of Irwin for this missing disclosure. However, this text portion of Irwin merely describes the same formula for calculating resistance of a material that is also described on page 6, lines 6-10 of the present specification. Column 26, lines 60-67 and column 27, lines 15-39 of Irwin describe how different resistances can be formed by varying the parameters that define the resistance of a material so that a unique electrical signature may be imparted to a document. This has nothing whatsoever to do with a b/a ratio, which is a parameter that relates to multi-layered wire structure, not documents containing electronic ink, which is the subject matter of Irwin. Stated simply, there is no b/a ratio in Irwin, and thus Irwin adds nothing to the prior art regarding desired values of b/a ratios.

3. Patentability of independent claims 12, 19 and 26 over Chartier in view of Irwin

Each of the independent claims of the present invention recite the following limitation:

> a first ratio of the first length to the first distance and a second ratio of the second length to the second distance are greater than or equal to approximately 2 in order to reduce the resistance of the multi-layered complementary wire structure

As discussed above, neither Chartier nor Irwin disclose or suggest this limitation. Thus, the combination of Chartier and Irwin fails to disclose or suggest all of the claim limitations. Accordingly, claims 12, 19 and 26 are believed to be patentable over the combination of these references.

4. Patentability of dependent claims

The dependent claims are believed to be allowable because they depend upon respective allowable independent claims, and because they recite additional patentable steps and elements.

Conclusion

Insofar as the Examiner's rejections were fully addressed, the instant application is in condition for allowance. A Notice of Allowability of all pending claims is therefore earnestly solicited.

Respectfully submitted,

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